

**ABSTRACT**

Applicable to two-way communication over the electricity network between a plurality of user equipments (2) and a head-end equipment (1); characterized in that the receptors in the equipment (1, 2) continually monitor communication quality by estimating signal to noise ratio (S/N) in the individual carriers in the upstream and downstream channels. The user equipments monitor the state of the network at each moment in time independent of whether or not the transmission is destination for them. Optimum transmission mode is chosen as a result of this monitoring by means of modifying, packet by packet, the number of bits per carrier, the redundancy introduced by a FEC generator (forward error correction/detection), the FEC code, and/or the transmission mode; so as to achieve optimum sharing of the network in time and frequency at all times and to maximize the transmission capacity of the various user equipments by the network.